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REMARKS/ARGUMENTS

1. (Original) An apparatus for determining a color and brightness of an LED in a printed circuit board, the apparatus comprising:

a sensor having a plurality of filters arranged in a matrix;

an output probe connected to the sensor, the output probe providing a color output and a brightness output in a single signal;

an input probe connected to the sensor, the input probe providing power to the sensor; and

a ground probe connected to the sensor.

2. (Original) The apparatus of Claim 1 wherein the plurality of filters comprise:

a plurality of clear receptors;

a plurality of red receptors;

a plurality of blue receptors; and

a plurality of green receptors, wherein the plurality of filters are interspersed in the matrix.

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3. (Original) The apparatus of Claim 1 further comprising:
a microprocessor connected between the plurality of filters and the output probe for calculating the color and the brightness of the LED.

4. (Original) The apparatus of Claim 1 wherein the input probe accommodates an operating voltage between approximately 2.7 Vdc and 5.5 Vdc.

5. (Currently Amended) An apparatus for determining a color and brightness of an LED in a printed circuit board, the apparatus comprising:
a sensor having a plurality of filters having different colors ~~arranged in a matrix;~~
a microprocessor connected to the sensor, the microprocessor calculating the color and brightness of the LED; and
an output probe connected to the microprocessor, the output probe outputting the color and the brightness through a single signal wire.

6. (Currently Amended) The apparatus of Claim 5 wherein the plurality of filters comprise: a plurality of clear receptors; a plurality of red receptors; a plurality of blue receptors; and a plurality of green receptors, each receptor interspersed in ~~[[the]]~~ a matrix.

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7. (Original) The apparatus of Claim 5 further comprising:
an input probe connected to the sensor, the input probe providing power
to the sensor.

8. (Original) The apparatus of Claim 5 further comprising:
a ground probe connected between the sensor and a ground.

9. (Original) The apparatus of Claim 5 wherein the
microprocessor is programmable.

10. (Currently Amended) A method for testing an output of an
LED comprising:

positioning a sensor adjacent an LED having an unknown color and
brightness, the sensor having a plurality of color receptors ~~arranged in a matrix~~
thereon;

determining a color and a brightness of the LED with a microprocessor
connected to the sensor; and

sending a single output signal from the sensor.

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11. (Original) The method of Claim 10 further comprising:
sampling the output of the LED for a period of time;
determining a count for each color receptor of the plurality of color
receptor; and
determining the color of the LED from a relationship of the count
relative to a frequency of the single output signal.

12. (Original) The method of Claim 10 further comprising:
converting a wavelength of the color to a frequency;
encoding the frequency with a pulse width; and
measuring a DC average of the pulse width to obtain the brightness.

13. (Original) The method of Claim 10 further comprising:
detecting and indicating white light with the sensor.

14. (Original) The method of Claim 10 further comprising:
comparing a sample across each color receptor of the plurality of color
receptors to determine the color of the LED.

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15. (Original) The method of Claim 10 further comprising:
sampling the output of the LED for a period of time;
determining a count for each color receptor of the plurality of color
receptor;
sequentially comparing the count for each color receptor with the
subsequent count of each other color receptor;
determining the color of the LED from a relationship of the count
relative to a frequency of the single output signal.

16. (Original) A method for testing an output of an LED
comprising:
positioning a sensor adjacent an LED having an unknown color and
brightness, the sensor having a plurality of color receptors arranged in a matrix;
sampling the output of the LED for a period of time;
determining a count for each color receptor of the plurality of color
receptors;
converting a wavelength of the color to a frequency;
determining the color of the LED from a relationship of the count
relative to the frequency;
encoding the frequency to a pulse width; and

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measuring a DC average of the pulse width to obtain the brightness of the LED; and

sending a single output signal from the sensor.

17. (Original) The method of Claim 16 further comprising:
detecting and indicating white light with the sensor.

18. (Original) The method of Claim 16 further comprising:
comparing a sample across each color receptor of the plurality of color receptors to determine the color of the LED.

19. (New) The apparatus of Claim 5 wherein the plurality of filters having different colors are arranged in a matrix.

20. (New) The method of Claim 10 further comprising:
arranging the plurality of color receptors in a matrix.

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REMARKS

Applicant urges that there is no additional fee for this Amendment because the total number of claims remains under 20 and the total number of independent claims has not increased. However, Applicant hereby authorizes the Commissioner to charge any necessary fees to Deposit Account 19-3550.

In view of the above Amendment and remarks, Applicant sincerely believes that Claims 1-20 of this patent application are now in condition for allowance and early allowance is respectfully requested. Applicant urges the Examiner to contact the undersigned should any issue require further consideration.

Respectfully submitted,



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